



FAX COVER SHEET

John Piskorski
Law Office
Shipley Company
455 Forest Street
Marlborough, Massachusetts 01752-4634

Telephone: (508) 229-7662
Fax: (508) 787-4730

| | | | |
|-------|--------------------|---|--------------|
| Date: | March 10, 2003 | Total Pages (including cover sheet): | 3 |
| TO: | Examiner Edna Wong | Fax Number: | 703-872-9031 |
| CC: | | Fax Number: | |

NOTES: Proposed Amendments for Patent Application Serial No. 09/910,448

We would appreciate your distributing this fax to the above individual(s)
AT YOUR FAX LOCATION ONLY - Thank you!

3. (Amended) The process of claim 1 or 2 wherein the substrate is first treated with ~~a~~the bismuth material and then treated with ~~a~~the sulfur material.

4. (Amended) The process of ~~any one of claims 1 through 3~~claim 1 or 2 wherein the substrate is treated with ~~sulfur~~ material is a sulfide reagent.

6. (Amended) The process of ~~any one of claims 1 through~~claim 5 wherein the sulfide reagent is a sulfur salt.

7. (Amended) The process of ~~any one of claims 1 through~~6~~claim 1~~ wherein the substrate is treated with a solution of the bismuth material.

9. (Amended) The process of ~~any one of claims 1 through~~8~~claim 1~~ wherein the substrate is treated with a solution of the sulfur material.

11. (Amended) The process of ~~any one of claims 1 through~~10~~claim 1~~ wherein the substrate is electrolytically~~metal~~ plated with nickel.

12. (Amended) The process of ~~any one of claims 1 through~~10~~claim 1~~ wherein the substrate is electrolytically~~metal~~ plated with copper.

13. (Amended) The process of ~~any one of claims 1 through~~10~~claim 1~~ wherein the substrate is electrolytically~~metal~~ plated with gold.

14. (Amended) The process of ~~any one of claims 1 through~~13~~claim 1~~ wherein the substrate is treated with an etchant prior to treatment with the bismuth material.

15. (Amended) The process of ~~any one of claims 1 through~~14~~claim 1~~ wherein the substrate surface comprises a dielectric material.

16. (Amended) The process of ~~any one of claims 1 through claim~~ 15 wherein the substrate surface comprises an epoxy resin, ABS, or a polyetherimide.

17. (Amended) The process of ~~any one of claims 1 through 16~~ claim 1 wherein the substrate is an electronic packaging substrate.

18. (Amended) The process of ~~any one of claims 1 through 16~~ claim 1 wherein the metal plate provides a decorative or protective function.

19. (Amended) The process of ~~any one of claims 1 through 18~~ claim 3 wherein the substrate is treated with water after treatment with the bismuth material and before treatment with the ~~sulfide~~ sulfur material.

Please amend the claims as follows:

1. (Amended) A process for metal deposition, comprising treating a substrate dielectric with a bismuth material and a sulfur material and metal plating the substrate.
2. (Amended) The process of claim 1 wherein the substrate dielectric is treated with trivalent bismuth.
3. (Amended) The process of claim 1 or 2 wherein the substrate dielectric is first treated with a the bismuth material and then treated with a the sulfur material.
4. (Amended) The process of any one of claims 1 through 3 claim 1 or 2 wherein the substrate is treated with sulfur material is a sulfide reagent.
6. (Amended) The process of any one of claims 1 through claim 5 wherein the sulfide reagent is a sulfur salt.
7. (Amended) The process of any one of claims 1 through 6 claim 1 wherein the dielectric substrate is treated with a solution of the bismuth material.
9. (Amended) The process of any one of claims 1 through 8 claim 1 wherein the dielectric substrate is treated with a solution of the sulfur material.
11. (Amended) The process of any one of claims 1 through 10 claim 1 wherein the dielectric substrate is electrolytically metal plated with nickel.
12. (Amended) The process of any one of claims 1 through 10 claim 1 wherein the dielectric substrate is electrolytically metal plated with copper.
13. (Amended) The process of any one of claims 1 through 10 claim 1 wherein the dielectric substrate is electrolytically metal plated with gold.
14. (Amended) The process of any one of claims 1 through 13 claim 1 wherein the dielectric substrate is treated with an etchant prior to treatment with the bismuth material.
16. (Amended) The process of any one of claims 1 through 15 claim 1 wherein the dielectric substrate surface comprises an epoxy resin, ABS, or a polyetherimide.
17. (Amended) The process of any one of claims 1 through 16 claim 1 wherein the dielectric substrate is an electronic packaging dielectric substrate.
18. (Amended) The process of any one of claims 1 through 16 claim 1 wherein the metal plate provides a decorative or protective function.

APPENDIX B

Please amend the claims as follows:

1. A process for metal deposition, comprising treating a dielectric with a bismuth material and a sulfur material and metal plating the substrate.
2. The process of claim 1 wherein the dielectric is treated with trivalent bismuth.
3. The process of claim 1 or 2 wherein the dielectric is first treated with the bismuth material and then treated with the sulfur material.
4. The process of claim 1 or 2 wherein the sulfur material is a sulfide reagent.
6. The process of claim 5 wherein the sulfide reagent is a sulfur salt.
7. The process of claim 1 wherein the dielectric is treated with a solution of the bismuth material.
9. The process of claim 1 wherein the dielectric is treated with a solution of the sulfur material.
11. The process of claim 1 wherein the dielectric is metal plated with nickel.
12. The process of claim 1 wherein the dielectric is metal plated with copper.
13. The process of claim 1 wherein the dielectric is metal plated with gold.
14. The process of claim 1 wherein the dielectric is treated with an etchant prior to treatment with the bismuth material.
16. The process of claim 1 wherein the dielectric comprises an epoxy resin, ABS, or a polyetherimide.
17. The process of claim 1 wherein the dielectric is an electronic packaging dielectric.
18. The process of claim 1 wherein metal provides a decorative or protective function.
19. The process of claim 3 wherein the dielectric is treated with water after treatment with the bismuth material and before treatment with the sulfur material.